

7. (a) Discuss how NULLs are treated in comparison with operators in SQL. How are NULLs treated when aggregate functions are applied to a SQL query and if they exist in grouping attributes?
- (b) What is a minimal functional dependency? Does every functional dependency have a minimal equivalent? Is it always unique or not? Explain.

UNIT – IV

8. (a) How two-phase locking is related to serializability? Discuss the role of two-phase locking in deadlock detection and avoidance.
- (b) What are the needs of packages? How a package can be created and invoked in SQL?
9. (a) Describe levels of isolation possible violations based on two-point isolation with example.
- (b) Differentiate between statement level trigger and row level trigger. How a trigger can be created, updated and deleted?

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67059

MCA 2nd Semester CBCS Scheme w.e.f. 2016-17 Examination – May, 2018

DATA BASE MANAGEMENT SYSTEM

Paper : 16MCA32C4

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt five questions in all. Question No. 1 is compulsory questions, attempt four more questions selecting one question from each Unit.

1. Compulsory Question :

- (a) What four main types of actions are involved in database ?
- (b) What is a participation role ? When is it necessary to use role names in relationship types ?

- (c) Why are duplicate tuples not allowed in a relation ?
- (d) Discuss the meanings of existential quantifier and universal quantifiers.
- (e) What is the difference between WHERE and HAVING clause ?
- (f) What undesirable dependencies are avoided when a relation is in 3NF ?
- (g) What is timestamp ? How does the system generate timestamps ?
- (h) Differentiate between Functional and procedure in PL/SQL.

UNIT – I

- 2. Discuss the three schema mapping and why mapping are needed between schema level schema languages support this structure. What is data independence. How do different structure ?
- 3. Define recursive relationship, relationship as attribute and identifying relationship in ER model. Also discuss participation constraint relationship.

UNIT – II

- 4. (a) What are the conditions to be fulfilled for two relations to be involved in UNION operation ? Why do UNION, INTERSECTION and DIFFERENCE operations require the operand relations to be UNION compatible? Justify the answer.
- (b) Explain about Domain constraints and Referential integrity constraints with example.
- 5. (a) Differentiate between relation schema and relation state. When is a relation state said to be valid state. Discuss with example.
- (b) How does tuple relational calculus differ from domain relational calculus ? Also discuss the expressive power of domain relational calculus.

UNIT – III

- 6. (a) Discuss the six clauses in the syntax of SQL retrieval query ? What type of construct can be specified in each clause ? Which of the six clauses are required and which are optional ?
- (b) What is BCNF ? If a relation is in BCNF, is it guaranteed that it will be in 1st, 2nd, and 3rd normal forms as well ? Explain.